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USDOC FOR ITA DAS KASOFF, MELCHER, MAC/OCEA  
NSC FOR LOI, SHRIER  
STATE PASS CEA FOR BLOCK  
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SUBJECT: TSMC AND SMIC: TWO SEMICONDUCTOR RIVALS IN SHANGHAI FACE OFF  
AMID ECONOMIC DOWNTURN

REF: SHANGHAI 145

1. (SBU) Summary: TSMC and SMIC, two large semiconductor manufacturers with foundries in Shanghai, saw a "freefall" in orders in late 2008. The firms hit bottom in December 2008 and January 2009, but orders started to pick up again in Q1 2009. Shanghai-based executives at these firms are cautiously optimistic about the firms' prospects in China in 2009, citing the impact of the Chinese Government's economic stimulus measures. Neither firm has laid-off employees amid the downturn, instead adopting cost cutting measures like unpaid leave, salary cuts, and hiring freezes, despite local government encouragement to hire new university graduates. The warming of cross-Strait relations helped SMIC double its market share in Taiwan but has had minimal impact for TSMC, they said. The two companies have been engaged in litigation battles over the past several years. End summary.

2. (U) Congenoffs spoke with Shanghai-based executives of Semiconductor Manufacturing International Corporation (SMIC) and Taiwan Semiconductor Manufacturing Company China (TSMC) in April about the impact of the economic downturn on Shanghai's semiconductor industry. Interlocutors included William Wang, Vice President, TSMC (China); David Liu, Deputy Director of Finance, TSMC (China); Richard Chang, Founder, President and CEO, SMIC; and J. Matthew Szymanski, Vice President, Corporate Relations, SMIC. TSMC China is a semiconductor foundry established in Shanghai in 2003 (its headquarters are in Taiwan). The Shanghai foundry manufactures 8 inch wafers, which are sold to IC (integrated circuit) design companies in China for use in mobile phones, PCs, and consumer electronics. SMIC is incorporated in the Cayman Islands but is headquartered in Shanghai with facilities in Beijing, Tianjin, Chengdu, Wuhan, and Shenzhen. SMIC makes 8 inch and 12 inch wafers for IC design companies. Its chips are used in mobile phones, PDAs, and consumer electronics.

"Freefall" in Orders

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13. (SBU) William Wang of TSMC said his company's worldwide sales in 2008 grew by 3.9 percent year-on-year (YOY) with total revenue reaching USD 10.2 billion. However, much of the growth was in the first half of 2008. A downturn in orders began in July 2008, leading to a "freefall" in November 2008 when orders plummeted by 80 percent, said Wang. Orders have declined since and were "the lowest ever" in January 2009. Wang estimates a 20-25 percent YOY global revenue decline in 2009. TSMC was hard hit by the global economic downturn because of its large exposure to the U.S. market (accounting for 60-70 percent of total sales). TSMC's Shanghai foundry has also dramatically cut production, manufacturing 30,000 wafers per month in Q4 2007, 43,000 by the end of 2008, and now only 15,000 per month. (Note: At full utilization, the Shanghai foundry can manufacture 100,000 wafers per month. End note.) Capacity utilization, which was at 80 percent in Q3 2008 and 60 percent in Q4 2008, is now only at 25 percent. Wang acknowledged that the foundry may have expanded too quickly in early 2008.

14. (SBU) SMIC's sales were down 12.6 percent in 2008 compared with 2007, with revenues declining progressively each quarter from USD 362 million in Q1 2008 to USD 272 million in Q4 2008. SMIC also saw a sharp decline in orders in Q4 2008 and Q1 2009, said Richard Chang, with an 85 percent YOY drop in orders in December 2008, the company's "worst month." The global economic downturn has had a large impact as the company is heavily dependent on exports, which account for 70 percent of its sales. Capacity utilization declined sharply from 90 percent in Q3 2008 to 67 percent in Q4 2008 and 34.9 percent in Q1 2009. Chang thinks the company hit bottom in December 2008.

China Market Still Doing Okay

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15. (SBU) Despite the sharp global downturn in 2008, our interlocutors said the China market is still doing "okay." According to Wang of TSMC, sales growth for TSMC in China in Q1 2009 was "the best" of all the regions, and the number of customers in China (currently 100 IC design companies) is still growing. Although mainland China only accounted for USD 200 million in revenue (2 percent of total worldwide sales) in 2008, Wang expects revenue in China to continue its double-digit growth (sales in China has doubled every year since 2004). Wang anticipates a "tilted L shaped recovery" globally for TSMC over the next 2-3 years. "Hopefully we hit bottom in January 2009," he said.

16. (SBU) Chang of SMIC expects the semiconductor industry to continue its recovery in Q2 2009. He believes the China market has the potential for fastest growth of all regions in the world, as orders picked up 35 percent in Q1 2009 from the previous quarter and is expected to grow 70 percent from Q4 2008 by the end of Q2 2009. The domestic IC supply in mainland China now only meets 20 percent of total IC demand in China, according to SMIC's internal documents, as China continues to churn out products with ICs, such as household appliances, PCs, and mobile phones.

Helped by Chinese Stimulus Measures

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17. (SBU) Both TSMC's Wang and SMIC's Chang partly attributed their optimistic outlook for the China market to the stimulus measures recently implemented by the Chinese Government. Although semiconductor manufacturers will not receive anything direct through the stimulus measures, SMIC's large customers, like TV manufacturers Pixelworks and Haier, are likely to benefit from a boost in domestic consumption, said Chang. Wang similarly expects the government's "household appliances to the countryside" policy to boost rural consumption of household electronics, mobile phones, and PCs, thereby boosting demand for ICs used in these products. The domestic demand for telecom products should also rise after the deployment of 3G technology in China, said Wang.

## No Plans to Layoff Workers

18. (SBU) SMIC has 6000 employees in its Shanghai headquarters. According to Szymanski, SMIC has not laid-off any employees amid the downturn but has frozen all new hiring, despite local government encouragement to hire new university graduates. According to Chang, the Shanghai Government has offered to subsidize 20-25 percent of the salary for new university graduate hires for at least one year. The company has implemented a 15 percent pay cut across the board, with a bigger cut for upper management. SMIC's labor union has supported these cuts, added Chang, in preference to any layoffs.

19. (SBU) TSMC currently has 1200 employees in its Shanghai foundry (70 of whom are from Taiwan). Although two-thirds of its machines are currently shut down, TSMC Shanghai does not plan to layoff any employees, said Wang. Instead, the company is taking other cost cutting measures, such as having employees take 4 days of unpaid leave every month, a policy which Wang projected would be discontinued by the end of May 2009. The company also relies on natural attrition. Wang said TSMC does not want to layoff workers since they receive 1-2 years of on-the-job training, a significant investment for the company. (Comment: A bigger concern is likely that laid-off employees would be picked up by rival firms, such as SMIC. End comment.)

## Hoping for More Level Playing Field

10. (SBU) As a Taiwan-based company, TSMC's Shanghai foundry

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has to "walk a fine line" between Taiwan, Chinese, and U.S. regulations, said Wang. For example, TSMC has the technology to produce 45nm (nanometer) chips in Taiwan, but is prevented under Taiwan law from deploying technology more advanced than 0.18um (microns) in mainland China. This places TSMC at a disadvantage in the mainland, said Wang, since some of its competitors face no such restrictions. Szymanski of SMIC corroborated this, stating that "SMIC exists" because U.S. and Taiwan regulations restrict U.S. and Taiwan firms from deploying its most advanced technology in the mainland. One other disadvantage for TSMC, according to Wang, is that government-funded projects are often awarded to domestic firms instead of "foreign" firms like TSMC. "Although the Chinese Government wants us to invest more in China, there is some discrimination against us because we are a Taiwan company," said Wang. He hopes TSMC will be able to compete on a more "level playing field" eventually. Wang said the recent warming of relations between mainland China and Taiwan has not had a big impact on TSMC's business in the mainland. The biggest benefit has been that it is now easier to send the company's 300 local employees to Taiwan every year for training. On the other hand, SMIC has been able to double its market share in Taiwan over the past year, according to Chang, who said that this was due to improved cross-Straits relations under Taiwan President Ma Ying-jeou.

## No Love Lost Between Rivals

11. (SBU) TSMC's Wang listed SMIC, Huahong NEC, and Grace Semiconductor, all located in Shanghai, as his company's main rivals. TSMC and SMIC have been engaged in litigation for years, with TSMC suing SMIC for allegedly pilfering its technology. "They are always trying to steal our technology," said Wang. According to Szymanski of SMIC, however, TSMC "cannot compete with SMIC in the China market, so it attempts to block SMIC through litigation." When asked about the current pending lawsuit against SMIC, TSMC's Wang only commented that the case is "still ongoing."

## Comment

12. (SBU) Like other export-dependent industries in East China, the semiconductor industry in Shanghai was hard hit by the global economic downturn. Although our interlocutors believe the Chinese Government's economic stimulus measures will have a measurable impact on domestic consumption of consumer

electronics, a sentiment heard among other industry and government interlocutors in East China, TSMC and SMIC still remain heavily exposed to overseas markets. Our interlocutors' cautious optimism for 2009 appears to hinge on the hope that U.S. and other developed economies will bounce back from the "bottom" of a few months ago. As Wang of TSMC said, although the China market is picking up and his company is trying to diversify its overseas markets, without a recovery in the United States, 2009 could yet turn into another financially challenging year for the industry.

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